

Amendments to the Specification:

A new paragraph entitled “Cross-Reference to Related Applications” is to be inserted at Page 1, line2, just above “Field of the Invention” as follows:

Cross-Reference to Related Applications

This Application is a national phase application (371) of PCT/AU02/01162, filed on August 29, 2002, which is a Continuation Application of USSN 10/183,182, filed on June 28, 2002, now Issued Patent No. 6,682,174.

The paragraph beginning at Page 7, lines 1-11, is to be amended as follows:

Turning initially to Fig. 1 to Fig. 3, there will now be described the operational principles of the preferred embodiment. In Fig. 1, there is illustrated schematically a sectional view of a single nozzle arrangement 1 which includes an ink nozzle chamber 2 containing an ink supply which is resupplied by means of an ink supply channel 3. A nozzle rim 4 is provided to define an ink ejection port. A meniscus 5 forms across the ink ejection port, with a slight bulge when in the quiescent state. A bend actuator device 7 is formed on the top surface of the nozzle chamber and includes a side arm 8 which runs generally parallel to the surface 9 of the nozzle chamber wall 9 so as to form an “air breathing slot” 10 which assists in the low energy actuation of the bend actuator 7. Ideally, the front surface of the bend actuator 7 is hydrophobic such that a meniscus 12 forms between the bend actuator 7 and the nozzle chamber wall surface 9 leaving an air pocket in slot 10.

The paragraphs beginning at Page 8, lines 8-29, are to be amended as follows:

The silicon wafer 20 preferably is processed so as to include a CMOS layer 21 which can include the relevant electrical circuitry required for full control of a series of nozzle arrangements 1 that define the printhead chip of the invention. On top of the CMOS layer 21 is formed a glass layer 22 and an actuator 7 which is driven by means of passing a current through a serpentine copper coil 23 which is encased in the upper portions of a polytetrafluoroethylene (PTFE) layer 24. Upon passing a current through the coil 23, the coil 23 is heated as is the PTFE layer 24. PTFE has a very high coefficient of thermal expansion and hence expands rapidly. The coil 23 constructed in a serpentine nature is able to expand substantially with the expansion of the PTFE layer 24. The PTFE layer 24 includes a lip portion [[8]]11 that, upon expansion, bends in a scooping motion as previously described. As a result of the scooping motion, the meniscus 5 generally bulges

and results in a consequential ejection of a drop of ink. The nozzle chamber [[4]]2 is later replenished by means of surface tension effects in drawing ink through an ink supply channel 3 which is etched through the wafer through the utilization of a highly an isotropic silicon trench etcher. Hence, ink can be supplied to the back surface of the wafer and ejected by means of actuation of the actuator 7. The gap between the side arm 8 and chamber wall 9 allows for a substantial breathing effect which results in a low level of energy being required for drop ejection.

It will be appreciated that the lip portion [[8]]11 and the actuator 7 together define a displacement surface that acts on the ink to eject the ink from the ink ejection port. The lip portion [[8]] 11, the actuator 7 and the nozzle rim 4 are configured so that the cross sectional area of the ink ejection port is similar to an area of the displacement surface.

The paragraph beginning at Page 15, lines 4-7, is to be amended as follows:

The purpose of the air is to maintain the passages 184 clear of foreign particles. A danger exists that these foreign particles, such as dust particles, could fall onto the nozzle arrangements 110 adversely affecting their operation. With the provision of the air inlet openings [[88]]188 in the nozzle guard 180 this problem is, to a large extent, obviated.

The paragraph beginning at Page 17, lines 14-18, is to be amended as follows:

A fourth sacrificial layer 228 is applied by spinning on 4 μm of photosensitive polyimide or approximately 2.6 μm of high temperature resist. The layer 228 is softbaked, exposed to the mask 230 and is then developed to leave the island portions as shown in Fig. [[9k]]26k of the drawings. The remaining portions of the layer 228 are hardbaked at 400°C for approximately one hour in the case of polyimide or at greater than 300°C for resist.